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Editorial.

ON LITERATURE AND LITERARY ABILITY.

It is not given to every man to be a stylist or to describe plain facts in terse or ornate language, but almost every educated individual can express some of his thoughts in writing, or narrate with his pen the daily incidents affecting his calling or his own walk in life. The literature of a nation is a good guide as to its advancement or decay. What applies to nations relates with equal force to bodies of men banded together by mutual laws, privileges and advantages, all travelling in a like direction over the same fields. Where there are many travellers with open eyes diverse views will be taken and various facts seen; one will observe and note what another misses and overlooks, and so a vast store of experience may be gained which if expressed in writing will be all for the benefit and advancement of the body politic. The Elizabethan period was noted for the great revival in learning, and for the beauty, depth and profuseness of our literature as a nation. Great books and fine minds flourished at that time, and some of us are of opinion that English literature reached its zenith then and that neither before nor since has its standard been carried to such supreme heights.

We are a little body of scientific men deeply interested in the welfare of animals, a valuable force in the economic and utilitarian life of the nation.

We should be a learned and intellectual group of individuals and our literature should be an adequate expression of the life and vigour that is in us. What of it? Can it generally be said to be plentiful, profound, or greatly specialized? Compared with the medical man, even taking into consideration the difference in numbers between the totals of the members of the two professions, do we equal them proportionately in the output of technical

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books? Almost all aspects and every field of surgical and medical knowledge have been traversed and explored by those who care for the human body in health and disease. We need to take an example from them in this matter. For years we existed on one standard volume of medicine and surgery of British extraction. It was and is a good book of great value, but indirectly it remained for some time as a monument of veterinary inactivity in literary fields.

Ability to write is plentiful enough within our ranks. A little practice will tend to perfect the gift. These lines are written to try and cause some introspection in our midst. We ought all to endeavour to be useful in our day and generation. Utility is a man's sole excuse for existence. Clinical records are the foundations on which a handsome superstructure of veterinary medical and surgical knowledge can be built. The writers willing, editors are chiefly grateful, publishers kindly disposed, and (notwithstanding all tales to the contrary) usually fair dealing. Almost every member of our profession can contribute his quota to the erection of a superstructure that will do our body credit and bring us into line with such countries as France, America, Germany (before the War), and to a less degree Switzerland. It is a mistake to suppose that the task is hard. It needs ability, courage, patience and perseverance, but "all knowledge is not at the bottom of a well, or the far end of a telescope. As a matter of fact, an intelligent person, looking out of his eyes and hearkening in his ears, with a smile on his face all the time, will get more true education than many another in a life of heroic vigils." Having obtained the knowledge, let us communicate it for the benefit of our profession as a whole and for the good of generations of veterinary surgeons yet unborn.

Some say that veterinary literature is bound to be stagnant at a time of war like this. We are not of those who hold this view. On the contrary, we consider that it ought to flourish greatly. Many of our members have changed their scene of action and are nomads. A nomadic life creates new thoughts and fresh experiences and tends to bring a flood of writing. At least it has been so in the case of poets, novelists and journalists. The great wanderers have ever been the prolific writers—the men whose literary knapsacks have always supplied a full and regular store of intellectual fare. That a life of warfare is not inimical

to literary activity is proved by the fine and lucid dispatches of Sir Ian Hamilton. We hear, too, that a little booklet has been published giving an account of a "by-election" among the interned British civilians at Ruhleben. All the doings there are gaily described. A case of literature triumphant over difficulties. A rolling stone may gather no moss, but who wants to gather moss if he can accumulate a new supply of thoughts and experiences and keep his intellect alive. The active minds are those that make science and art progress; "to be wholly devoted to some intellectual exercise is to have succeeded in life." "There are just two reasons for the choice of any way in life: the first is inbred taste in the chooser; the second some high utility in the industry selected." There has been a revival in our literature lately. Let us hope it will grow and expand.

G. M.

SWINE FEVER AND THE SERUM TREATMENT.

In view of the need for husbanding the food supply of the country, the Board of Agriculture and Fisheries decided last August that the slaughter of pigs for the purpose merely of reducing the risk of the spread of swine fever should be resorted to as little as possible, and that the slaughter of breeding sows or partially matured animals purely as a matter of precaution should be avoided. The Board has therefore relied on isolation combined with the slaughter of all swine distinctly sick of swine fever at the time of diagnosis.

Meanwhile, investigations into the efficacy of the injection of anti-swine-fever serum which were being carried out before the War began have been continued, and the results obtained, together with the evidence accumulated as to its use in other countries, show that if proper precautions are taken immunity from swine fever can be established by serum treatment.

The Board are now in a position to offer serum treatment of pigs free of cost, in the early stages of an outbreak of swine fever, and they wish to impress on all owners that to obtain the best results from this treatment notification of the suspected existence of swine fever on their premises should be made at the earliest possible date. Any delay in notifying not only renders the owner liable to prosecution for failing to comply with the provisions of Article 1 (1) of the Swine Fever Order of 1908, but also tends to increase his loss owing to more pigs becoming affected before serum treatment is carried out.

Board of Agriculture and Fisheries,
4, Whitehall Place, London, S.W.
September 18, 1915.

General Articles.

"THE CINDERELLA OF THE SERVICE."

The Work of the Army Veterinary Corps.

By E. G. Fairholme.

(Abstracted from *The Nineteenth Century and After*).

We read in the recent reports of the great European War that the cavalry has, for the time being, at all events, had to do the work of infantry, and some of us have run away with the idea that horses are therefore unnecessary to a modern army, especially since mechanical haulage has, to an extent, superseded horse draught. This view is, of course, entirely erroneous, because there are countless tasks for horses which motor traction could never perform. Cavalry and artillery horses, especially when ploughed land, ditches, or hedges have to be negotiated, must always hold their own, in spite of the modern march of "caterpillar-wheels," motor-cars, motor-cycles, and armoured trains.

Horses can, therefore, not be superseded, though they may be taking a secondary place, perhaps, where formerly they were of primary importance. Even then it has been estimated that over one million horses are being daily employed in the vast battlefield which blazed first in Europe, and has now already spread to other Continents. It must be remembered that, though this may be a war of attrition, and, consequently, things move slowly, horses are being used up because, for one horse in the firing line, there are a dozen, or perhaps a hundred, occupied in the humbler, but no less hard, work connected with the ammunition and supply parks. Therefore it is some consolation to know that there is a strong feeling that much must be done for the welfare of the fit horses, and for the care of the sick and wounded animals who have been pressed, without option, and with no chance of deriving benefit, into the service of the various combatants.

We must remember that the horses of the British Army are the flower not only of the Mother Country, but also of her Colonies and Dependencies. They are not only the hunters, hacks, and carriage horses, who in ordinary times lead a life of luxury, or the omnibus, farm, and draught horses of our home commerce; they include also walers from Australia, the smaller animals of India and the Far East, and the hardy creatures of the Veldt,

Canada, and the Far West—all collected to do service, in one long line stretching round the world, till they reach their ultimate and often horrible fate on the battlefield.

My recent visit to these horse hospitals in France must always stand out in my memory as one of the most interesting and inspiring experiences of a not unvaried life. And the general impression, after inspecting eleven such special centres of veterinary activity, is one of immense admiration for the organization of the Corps, and the ability, energy, and humanity of its members. Naturally, each hospital has some special feature—due either to the nature of the ground or to the individuality of the officer in charge.

The first hospital visited gave me a fair idea of what was to be seen at each of the others, but with each subsequent visit I was better able to gauge and appreciate the wonderful human mechanism, which makes the whole work of the A.V.C. move so smoothly and be of such economic value. Ground had, of course, to be selected which would best suit the purposes of the work, and countless and unexpected difficulties had in each case to be overcome. During the whole of the last winter, one continued fight against rain, with its consequent mud and attendant ills for the horses, had been made, and though I was fortunate in coming at a time when much of the ground had dried and settled, I could in a small measure realize the havoc of the wet by an experience of one day's rain on the clay soil of Northern France. Slipping and sliding about on soil which had, with infinite trouble and skill, been drained by members of the Corps, whose special genius for such necessary labour had been discovered by a far-seeing commanding officer, I wondered how order had come out of what must have seemed at first irreducible chaos, made many times more difficult because horses—sick, debilitated, and wounded—had, at the commencement, been arriving daily, before even the stables were ready for their reception. Everyone with a knowledge of horses will understand how the ground must suffer, when these animals have to stand in the open on clay soil which becomes churned into a sea of mud after a short time. In some places the able Director of Veterinary Services—and it must not be forgotten that the well thought-out schemes for hospital distributions were rudely upset by the retreat from Mons and the shifting tide of battle—was fortunate in discovering brickfields

with drying sheds, or disused mills or kilns, which, after a vast amount of cleaning, have served as admirable shelters; but the difficulties, at each and every place, of providing shelters for 1,000 horses have had to be conquered by that innate quality of facing and overcoming impossibilities which has enabled Britons to become successful colonists. Here in the covered stalls—specially made or converted—stand the horses who have suffered in battle, and have passed through the hands of the various mobile sections at the Front to be sent on as needing special treatment.

With an ample supply of water—in many hospitals kept in troughs at the end of each building—roomy stalls, dry standing, and excellent fodder, these victims of war have every chance of recovery. When the weather and their condition permit they are tied by breast-lines in the open, or are turned out in the roomy paddocks, where they have every opportunity for exercise and grazing. Each hospital also has an exercise track made in a circle, surrounded on either side with strong wooden palisades, around which those requiring exercise are driven. In the centre of this is a sand bath for the mules, and here they can roll about to their hearts' content. Mules require a good deal of handling, and great care has to be exercised in bringing them together. They have to be introduced gradually, otherwise the old campaigners, very much after the manner of the older boys at school, are apt to make the lives of the newcomers a burden to them until they show what stuff they are made of. It is gratifying, and often amusing, to watch the heavy draught horses who, under ordinary circumstances, would spend their leisure after a hard day's work in stuffy stables, galloping round the fields or rolling on the ground with glee at their unwonted liberty. Thus turned out to grass—having been carefully sorted out so that the heavy and strong shall not oppress the weaker ones—with their hind shoes removed to prevent injuries in their frolics, they become hardened and fit, so that when, after being exercised on the roads to remind them of their former work, they are returned to the Remount Department, they are really more suited for the work than when they first arrived from England.

This acclimatizing process has been found to be so successful from an economic point of view that, while the present methods of warfare permit, the newly arrived horses are kept at No. 2

Veterinary Hospital or at the neighbouring Remount Depôt so that they may recover from the sea journey, which, short though it may be, takes away from their condition and strength.

It was difficult, except for the wounded and worn-out condition of some of the poor creatures, to realize that they were in a foreign country, helping and suffering in the greatest War of the world. At one hospital I saw many horses turned out to recuperate in an orchard where the trees were white with blossom; and, hearing the familiar " Come up, old girl! " " Woa, sonny! " it was indeed almost impossible to realize that only thirty miles away scenes of terrible suffering and hideous cruelty were being enacted. It was with deep gratitude and wondering amazement that I watched it all—so unreal and yet so terribly real—and I felt that at least we had recognized our obligations to our dumb allies, and were striving, as far as we could, to make up to them for the injuries we were inflicting upon them. But, lest I should be misunderstood, let me hasten to add that some of these poor creatures were having " the time of their lives." At one hospital I saw a horse which brought to mind the ordinary sight of an overtired coal-cart horse, standing patiently waiting, with legs at a slant, while his load was being shot down into the customer's cellar—the same attitude, but in what different surroundings!—deep, rich grass, soft underfoot and wonderful to eat, with trees to give cool shade, and fresh water to drink when so inclined. I was glad to think that that poor creature was having a real holiday!

At all the hospitals which I have visited it was the same story—now that the fine weather had come and the ground had been well drained, the horses had their chance. And in spite of all the winter had meant to them, and to the men, they had all stood the hardships wonderfully well. The death-rate was exceedingly small and was constantly decreasing, and the condition of the horses from the Front was also greatly improved. Quittor cases, which had formerly been difficult to treat when the animals had stood in puddles or mud-pies, could now be bandaged properly and would soon yield to treatment; skin diseases and parasites were decreasing, and the wounds were healing under the good influence of sun and fresh air. There was a spirit of cheerful competence which made one feel that, so far as the horses went, all was well in hand, and the ample supply of corn and excellent

hay spoke volumes for the transport and forage organization which made it possible to obtain abundant supplies from overseas. Even when face to face with the stupendous difficulties of the early part of the campaign, the work done by the Army Veterinary Corps was amazing.

During the whole course of the War [wrote the correspondent of the *Daily Mail*], especially lately, one arm of the Service, into which I have been able to get some insight, has surpassed itself. It is the Veterinary Corps, which was first formed after the South African War. This Corps has dealt with some 27,000 horses, probably more, up to date, and it has saved the lives of thousands of animals, of which many would have been condemned as incurable even in time of peace. The other day one of the quite young hands picked up somehow a German horse with three bullets in its shoulder, and, rather against his superior's advice, operated successfully, extracted the bullets, and in a surprisingly short time the horse was as fit as it could be. Some of these young men have indeed developed a real talent for quick and efficient surgery, even under fire.

The care of the horses has been remarkable all through the War. The Germans must have lost four horses to our one simply from want of care in unsaddling and removing harness and feeding. But, apart from this, the Veterinary Corps have saved their thousands by medical skill and organization. It is hard work, but they have their rewards in many amusing incidents. One is worth mention. A young soldier brought in one day a German horse, of which he was very proud. "You couldn't breed a better in Ireland," he said, "and every bit of leather is new." The veterinary sergeant, even before he saw the marks, recognized the horse as English. It had been lost and taken by the Germans three days earlier, and had now come back with brand new saddle and bridle and only a scratch to be healed. Incidently the episode suggests the astonishing perfection of German equipment. It is only in human—and perhaps humane—things that they fail. That horses and men are not machines escapes them.

It is illuminating to watch the arrival of new patients from the Front and contrast them with the condition of those who have already been successfully treated. The drooping head and lack-lustre eyes, the rough and dirty coat, the staring ribs, the upheld foot, the sore and irritating skin, and often, too, the

hideous wound, tell their tale of suffering patiently borne, which appeals at once to the keen soldiers who are there to remedy the various ills, to cleanse and heal the torn flesh. Skin diseases, quittors caused by nail-pricks, suppurating corns, frost-bites, or ulcerated legs from constantly standing in mud or water; swollen hocks, broken knees, saddle or girth galls, &c., are the common ills to be dealt with; but pneumonia and chills are frequent causes of trouble, and many horses arrive so lame and "done-up" that only a rest cure at the Convalescent Horse Depôt will put them right. Many cases of wounds from shrapnel, jagged bits of shell, or bullets arrive also, and these often necessitate complicated operations. Many a fine horse with a shoulder or quarter torn or punctured by a bullet stands in the line waiting to be attended to. All cases which necessitate operations are treated with a care formerly only given to human beings; while those to which painful dressings have to be applied are spared pain by the application of local anæsthetics. Each animal to be chloroformed is, after becoming unconscious, cast on a specially prepared operating bed, made of sacks stuffed with hay, fastened together and covered with sailcloth. Here the surgeon performs the operation with quickness and dexterity, and is assisted by men who watch the patient and, if necessary, are ready with another dose of chloroform. All seem equally keen on the success of the operation, and proud of the ultimate recovery of the animal. Having seen such operations performed, I can echo the remark made by a friend, who said that, should necessity arise, he would gladly be operated on by a modern veterinary surgeon, for they are as far removed from the old-fashioned horse doctor as the modern surgeon is from the "sawbones" of the past. So, too, is the modern pharmacy with its sterilizing boxes, its disinfectant sprays and countless instruments, all scrupulously clean and orderly, different from the old-fashioned and very dirty collection of instruments of torture which more often brought death than recovery. Here, with everything in its place, and with a constant supply of drugs sent from the base veterinary stores, one understands the change which has come over the whole profession, and has brought it into line with its elder brother, that of the physician and surgeon for human beings.

The arrangements for the treatment of the horses are almost as elaborate as those provided for the wounded troops, and include

a Convalescent Horse Depôt, where the recovering animals, like human patients, lead an open-air life and have special feeding. Situated in the richest grazing country in Northern France, and covering an area of something like twenty miles, the patients, some resting from the too often necessary overwork and strain which produce debility, others recovering from the wasting effects of bad wounds, injuries to their feet, or skin disease, can graze at will amidst ideal surroundings, sheltered from cold winds by high hedges, in paddocks with an ample supply of good, fresh water. Constantly under the keen eye of an A.V.C. officer and a staff, which on War Establishment should be 404, these horses, some 5,000 or more, grow sleek and are cared for as though they were candidates for some local horse-show. Here, too, are shelters built from the R.S.P.C.A. Fund for those that need special care; "skin lines" for those whose troubles in this direction have not been completely cured, and handy little enclosures for other horses who need extra watching or diet. Here, as everywhere else, were sad-looking animals, weary in body and mind, but I think the most pathetic were those poor artificially reared creatures who wandered aimlessly about in the rich land, unable to grasp the fact that the grass was to be eaten, and who had consequently to be acclimatized to their novel surroundings and educated to benefit from the grazing which surrounded them.

Figures, of course, speak more eloquently than words, and surely the good results of the work already done by the A.V.C. will more than justify the remark already quoted—that it has "surpassed itself." And it must not be forgotten here that forty of the veterinary officers are employed on horse transport duty, when they are responsible for the feeding, watering, and treatment of all horses and mules on the ships, and for the destruction of any incurably diseased or injured animals. The losses of horses under their charge, except in one or two serious instances which were unavoidable, have consistently been under 1 per cent. This, when one recalls the fact that the animals are imported almost from the four corners of the earth, is reassuring. But it is the figures showing the whole work of the A.V.C.—so far, of course, as one is allowed at this juncture to publish them—that reveal the value of the work. The total number of animals treated in hospitals up to date has been 81,134: of these 47,192 have been returned to Remounts as cured, 4,266 have died,

4,843 have been destroyed, and 1,842 have been cast and sold, while 22, 991 still remain in the hospitals and at the Convalescent Horse Depôt under treatment. The sick-rate has been approximately reduced by one half, the number of convalescents by one-third, the death-rate by a little less, and the number cast and sold is an infinitesimal proportion of the whole number.

"Sir John has received most satisfactory reports of the work done up to now by the Society, and has no doubt that its efforts for the care of the sick and wounded horses will have a most beneficial effect in shortening the period of sickness, and in reducing the wastage of horseflesh in the Army in France."

It is, of course, one thing to plan and arrange for an army, or even one of its many departments on paper, so as to fit in the various units of an immense force as part of the great "War Game," but it is a totally different affair to transfer the whole scheme to actuality, and to transport the complete machinery to a country across the sea. All the best organization on paper may be upset in an instant, and may have to be adapted to circumstances which, again in their turn, may give place to fresh ones dependent on the unexpected happenings of the moment; so that the elasticity of a scheme cannot be calculated with precision. The preconceived and defined work of the Army Veterinary Corps—which, in its present organization, is largely a result of the experience gained during the South African campaign, and which, as a Corps, dates back only twelve years—is a case in point.

To appreciate fully the change that has come over this special side of war, one must have some idea of the veterinary organization which existed in the past. About twenty years before the outbreak of hostilities in South Africa the "Regimental" system obtained, with a veterinary officer responsible to no one but the commanding officer of each regiment. This meant, of course, that no other regiment could call on his services, and in time of war he would only attend to the animals of that regiment to which he was attached. The result was that each regiment had to look after its own sick horses under a system which, years before, was shown to be impossible for the care of men on service, and applies with equal force to animals. This service, having at last been recognized as a failure, was converted into a department, to which the veterinary officers were attached, but as no subordinate and definite *personnel* or

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hospitals were provided, the difficulties under which it laboured during the South African campaign were immense and necessarily led to an inefficiency of method which was unavoidable. But while the British Army authorities still "economized" in this important direction, and withheld their sanction for the formation of veterinary hospitals, the Veterinary Department of the Indian Army had been given a free hand to create its own organization and was able, on the outbreak of the South African War, to send veterinary stores and three fully equipped hospitals, each of which was capable of sub-division into two complete, self-contained establishments. From India also came the first mobile veterinary field chests, containing the necessary instruments, dressings, and medicines, which have served as a model and are being used at the present time.

It will readily be understood that a very special training is, in peace time, required so that the work of healing sick and wounded horses can be carried on by competent men. For this purpose, one of the first things to do was to establish a veterinary school where the men, mostly selected from cavalry regiments, could be instructed under the veterinary officers. In the many classrooms and laboratories of this school, the practical training, as well as the theoretical teaching which is indispensable, is given, and the men renew their school days. In one room they learn the elements of anatomy; in another they take notes on the structure of the horse's foot; while in other parts of the building they are taught dental work, farriery, stabling, food selection, hygiene, and a thousand and one items which make for the comfort and health of the Army's four-footed charges. They learn to clip horses, to poultice them, and to feed them with this or that food, according to the nature of their work or their state of health. Before leaving, too, they are instructed in their management on the march and on board ship; and last, but not least, are taught to destroy them when necessary, with certainty and humanity. Attached to the school is a splendidly equipped Röntgen-ray department, and research laboratories are provided where officers may carry out advanced work in the prevention and cure of disease.

Extremely interesting, too, is the museum, which contains a large collection of bones showing the effect of sabre and gunshot wounds. Here also are to be seen *papier-mâché* models of field hospitals and concentration camps.

From these fully trained non-commissioned officers and men the military veterinary surgeons gain the assistance in carrying out their special work which was formerly supposed to be rendered by untrained, but perhaps very experienced, farriers. The commissioned officers of the Corps, as in the old days of the Army Veterinary Department, are qualified veterinary surgeons who have passed four years at a veterinary college or university. They do not pass into the Army through Woolwich or Sandhurst, but sit for a special examination after their collegiate course. On joining the Corps each undergoes three years' probation, during which the fitness of the young officer for his career is decided. Of course, in time of war this period of probation is waived, and civil veterinary surgeons are given commissions and work under military discipline. It says much for the patriotism of these men that so many have been found ready to throw up their private practices for this national work. For instance, at the present moment, some of the leading professors, now holding the comparatively humble position of lieutenants, are working in veterinary hospitals under men who have in former times attended their classes as students!

The Corps has, of course, been greatly strengthened for the period of the War, and the enlistment and training of the necessary and often raw men—a work shared by the R.S.P.C.A.—has added to the task of organization. From a peace strength of 166 officers and 249 non-commissioned officers and men, it has been increased to 700 officers and 8,000 men. These numbers include, of course, the men of the special units working in the field, besides the mobile veterinary sections and veterinary hospitals, which are naturally increasing with the growing needs of the Army.

On active service each division of troops, in addition to veterinary officers attached to units, has a mobile veterinary section, consisting of one officer and twenty-two men, all mounted and provided with all the necessary veterinary medicines, instruments, dressings, &c., contained in a veterinary chest for the officer, and small chests and wallets for his subordinates. The work of this section is controlled from divisional headquarters by a senior veterinary officer, to whom the officer in charge of the section is accountable. This officer is the responsible adviser of the Commander and his staff on all technical matters appertaining

to the veterinary service of the division, and administers the *personnel* of the Army Veterinary Corps attached to the division. The officers attached to the units are responsible for the treatment of the sick animals, and submit a weekly return of casualties to the senior officer; they also advise the commanding officers on all matters relating to the well-being of the horses under their charge. The detection and control of contagious diseases is one of their most important duties, another being to decide when a horse, owing to his condition, should be painlessly destroyed.

Mobile sections are divided into two sub-sections—one to collect fit horses from the firing lines and other places and to destroy the badly injured ones; the other to receive the sick and wounded animals and convey them to railhead, and thence to the nearest base veterinary hospital. Each of these hospitals—which are organized to deal with 1,000 cases—has a staff of 399 officers and trained men, including farriers, shoeing-smiths, saddlers, dressers, stable hands, and Army Service Corps' drivers for the ambulance, forage, and other Service wagons.

Medicines, dressings, instruments, and bandages are of course necessary; but the veterinary officer on the battlefield does not rely on them to a great extent. His chief anxiety is to get his casualties, whenever possible, and if this can be done without unnecessary suffering, transferred at once to one of the hospitals where, naturally, there is every provision for their treatment. Should circumstances permit, however, cases of slight sickness or injury are treated on the spot, and a temporarily incapacitated horse is turned out to grass for a few days at a neighbouring farm. In the event of a rapid advance, when time does not allow of the immediate transfer of horses to railhead, they are left at some suitable place in charge of a non-commissioned officer, and are collected later by the second subsection of the Mobile Section.

When, without any undue and insular partiality, we contrast our own splendid veterinary service with the corresponding organization of other armies, and learn that at every point the British system has established a marked superiority, we may well congratulate our Army veterinary authorities for their thoroughness and foresight. When we reflect, too, that this admirable system is a product of but twelve years' growth, and that all its diverse arrangements have been made on original lines, we realize with pride that our Army is second to none in initiative, and sets an example to the whole world in humanity to its dumb servants.

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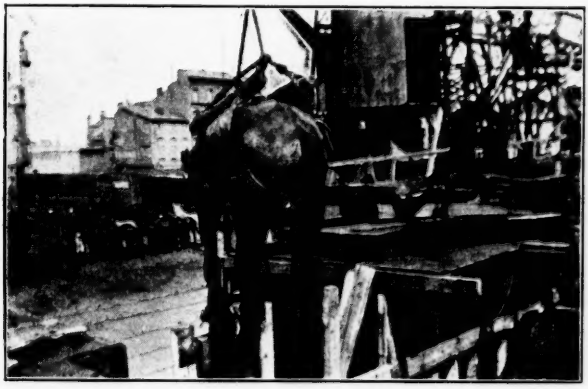
WITH THE CROIX VIOLETTE IN FRANCE.

Original Snapshots supplied by Mr. J. T. SHARE-JONES, F.R.C.V.S.

Placing wounded horse in a "Croix Violette" ambulance.



Unshipping horses at the base.

An operation in progress.

Administering restorative to a chloroformed horse.

Operation in progress.

A successful operation.

A big operation on the withers. Removing splintered bones.

A successful operation for poll evil.

A jam lunch.

MILITARY EXPERIENCES OF A GERMAN VETERINARY SURGEON.

R. Eberlein, who, in the capacity of veterinary officer of the Eighth Army Reserve Corps, participated in the German campaign against France up to the end of October, has reported (*Monatschrift für prakt Thierheilkunde*) his numerous experiences and observations during that period. He remarks that modern war confronts official veterinarians with a new and serious task, and that many who are still novices may gain much aid in it from the experience of others.

The horses of the corps to which Eberlein was attached (with the exception of some officers' horses) were animals acquired from private sources, and of the most diverse breeds. As a rule their ages ranged from 6 to 12 years; some were a little younger, but none were less than 4 years old. Notwithstanding the tremendous fatigue which they had to undergo for six weeks, which included fast marches of from sixty to seventy kilometres (one kilometre about five furlongs), the animals bore the strain satisfactorily; but in the first fifteen days it was necessary to get rid of some that were too debilitated. A certain number of horses sensibly lost condition, but upon the whole the state of nutrition was satisfactorily maintained, and a rest of eight days sufficed for restoration.

Among infectious and internal diseases, strangles was espe-

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cially prominent. It was introduced by some young animals from their source of origin. Although the disease was rather benign in character, it caused much loss of condition in many subjects. It did not cause many deaths. The treatment adopted was incision of suppurating lymphatic glands, administration of Carlsbad salts, and the external application of "revulsive frictions." Recovery took place slowly, and was accompanied by mild forms of such secondary affections as petechial fever and purulent catarrh of the nasal and frontal cavities.

Cases of colic due to irregular or improper feeding were comparatively few. Most of the colic seen was caused by overfeeding on "rest days," and in these cases treatment with arecoline gave good results. Cases of gastric catarrh and of intestinal inflammation were rather numerous; and the last-named were nearly always fatal. There were also cases of meningitis, which, if mild, yielded to a copious bleeding and the administration of arecoline. Catarrh of the upper respiratory passages, bronchitis, and cardiac weakness from over-fatigue, were common. The last-named condition was treated successfully by the subcutaneous injection of caffeine and camphor, and the administration of alcohol by the mouth. The author mentions one occasion upon which twenty horses became affected at the same time with urticaria, perhaps through drinking bad water.

The principal external affections seen, naturally, were wounds of all kinds. Large wounds were sutured. Contused ones were regulated at the edges and treated open. The author gained excellent results from a method of disinfection which he has adopted for years, consisting in drying the wound, removing the hairs, and treating with dilute tincture of iodine or with mastisol. (Mastisol is a solution of various resins, especially of mastiche in benzol, with a small addition of ether and of a colouring substance. It is prepared by the firm of Schubert, of Berlin. Transl.) He always avoided washing the wounds, even if they were soiled with earth. Recovery was very rapid; and the results were especially good when mastisol was used. Purulent, sanguineous and gangrenous wounds were also treated with pyoktanin and with powdered dry dressings. Contusions of the tibia, the radius and the joints were painted with mastisol.

Saddle sores, &c., were very frequent, and rapidly became

aggravated when the horses had to remain saddled. As the corps to which the author belonged advanced rapidly, it was not possible to rest the horses; and so these lesions, although treated from the start, became aggravated and led to serious necrotic processes of the back, the ligamentum nuchæ, the spines of the dorsal vertebræ, and the scapula. With all this, the cases of septicæmia were not common; and slaughter was only necessary in a few instances.

Cases of laminitis from over-fatigue were common and were often accompanied by colic. Treatment consisted in injections of arecoline, preceded by copious blood-letting.

There were also some serious cases of suppurative and gangrenous pododermatitis following lesions of the feet, laminitis, and cartilaginous quittors. Punctured wounds of the foot from nails or other objects penetrating the sole and coronet were common; these, treated with tincture of iodine or with mastisol, recovered in a few days, with the exception of a single horse which developed a fatal attack of tetanus.

There were some cases of abortion in mares due to excessive fatigue. The mares were from two to three months pregnant, and were requisitioned because the owners concealed their condition. Generally they showed symptoms of colic before abortion; and many of them, despite all treatment, died of purulent endo-metritis.

According to the author, the bullets of the French infantry inflicted much larger wounds than those of the Germans. The French bullets are longer and heavier than the German ones, and are tapered for about half their length. Consequently, if they struck against a resistant object they assumed a transverse position; and by thus penetrating the body they caused wounds resembling those made by the dum-dum bullet. The author had to treat many of these wounds in the horses of Hussar patrols, and had excellent results with mastisol and with tincture of iodine. He always avoided useless washing and probing.

The author records some isolated cases of interest. One was of a fissure of the tibia caused by a revolver bullet discharged from a distance of only 3 metres; fifteen days later, the bone became fractured. Another was a peculiar instance of serious "shock" in a horse from the bursting of a shell in its immediate vicinity. The animal fell to the ground as if struck by the

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lightning, and, although unwounded, for some time showed muscular tremors, unsteady gait, slowing of the heart's action, small pulse, pale mucous membranes, and loss of appetite. The horse improved gradually and recovered after three weeks.

Numerous wounds from splinters of shell were seen. Shrapnel wounds were not observed, because shrapnel burst too high.

The author characterizes the bombs of the aviators as "very murderous." They weighed at least ten kilogrammes (about 227 lb.), and the smallest fragment of them sufficed to wound seriously. One bomb alone killed three soldiers and seven horses of a column, and fatal wounds were often sustained even at a distance of more than a hundred metres from the place where the bomb burst.

The wounds produced by the darts of the aviators were also very serious. These darts were 12 cm. (about 4 4-5 in.) long, and were thrown in bundles of from 50 to 500, from a height of 1,500 metres and more.

The maintenance of the horses, upon days of fighting and of forced marches, left much to be desired. For days together the horses of the artillery and the train could not be unharnessed, much less groomed. The food supply in the author's period of service, was satisfactory, but the conditions with regard to water were bad. The enemy covered the wells and springs with manure and earth, so that the Germans only had muddy pool water at their disposal, which the horses would not willingly drink. Not rarely journeys of some kilometres had to be made, morning and evening, to water the horses; and the lack of good water caused many animals to sensibly fall off in condition.

According to the author, it is of great importance that the veterinary surgeon should supervise the horse shoeing. The shoes generally lasted four weeks, and even six or eight, especially if the feet were overhauled on "rest days," and loose nails changed and strengthened. Shoes and nails were requisitioned in France, because the reserve materials did not arrive from Germany, and the farriers' field stock was insufficient.

The transport of fresh horses from Germany was slow and troublesome. The horses arrived fatigued by the long journey, and were not strengthened by the life and work of the field. Horses were rarely captured as war booty, for the enemy killed those that could not be saved from falling into the hands of the Germans.

Horses which were injured, exhausted, or incapable of service from other causes, were collected into hospitals. The veterinary surgeons in charge of these destroyed incurable animals, sent those which required a long treatment to the rear, treated all the rest, and then sent them to the front. Numerous horses, which otherwise would have had to be destroyed or abandoned, were saved and restored to usefulness by means of these hospitals.

Finally, the veterinary surgeons were also charged with the inspection of meat for the whole army, and this service proved to be of great utility. The meat inspection was regulated according to the laws in force in Germany, which give special importance to the inspection of the animals during life.—(*La Clinica Veterinaria.*)—Per *Chicago Veterinary College Quarterly.* [*Cf.* pp. 151 and 152, VETERINARY JOURNAL, March, 1915.—ED.]

A NEW APPARATUS FOR THE ADMINISTRATION OF RESPIRATORY ANÆSTHETICS TO ANIMALS.*

THE apparatus described below has thus far been tried only upon horses, but the control the anæsthetist has over the delivery of the drug to the patient leaves no doubt in the writer's mind that it will be as popular for anæsthetizing any of the domestic animals, large or small, old or young, feeble or strong.

The greatest difficulty the animal anæsthetist has is that of delivering a definite amount of anæsthetic to his patient. There is never any assurance of how much or how little of a given amount of drug poured upon a sponge is actually consumed by the patient and how much is lost in the surrounding air. A vaporized anæsthetic like any drug has its lethal dose; if too much is given, the patient dies; if the dose is too small the effect is not satisfactory. The apparatus is designed to partly overcome this, the greatest obstacle against the general resort to respiratory anæsthetics in animal surgery.

It does not require much well-vaporized chloroform or ether to anæsthetize an animal if the vapour is consumed with certainty and with regularity. To effect a regular and certain delivery

* Presented at meeting of Illinois Veterinary Medical Association, Springfield July, 1915.

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and consumption with the crude nose-bags and sponge ordinarily used by animal anæsthetists is quite impossible. The struggling brutes, no matter how confined and no matter what sort of apparatus was used, would defeat the most experienced anæsthetist's efforts to regulate the amount of drug being consumed during the first phases of the administration, and after the patient had relaxed there was never any way to determine how much evaporated into the air and how much was taken in and absorbed. On this account the chloroforming of animals subjected to long operations was always a risky undertaking, because relaxation could only be maintained by the administration of a great amount of chloroform. The patient during the long procedure consumed an overdose—the body was over-saturated—and some of the untoward sequelæ of chloroforming were sure to supervene. In the short operations, lasting but a few minutes, these bad results were not in evidence because the dose never reached the danger point, but in operations lasting one hour or more there was always danger that the limit of security would be over-reached unexpectedly. Safe chloroforming requires safe dosing. When a practitioner administers this poisonous, elusive vapour to a patient without any real control of the amount that is being consumed, there must always remain a dread of possible overdosing, and it requires a wealth of experience not possessed by many veterinarians to know just when the danger point is being approached.

The administration of anæsthetics through the crude face masks used by veterinary surgeons has always been uncertain in its effects because the reaction of the patients—the only real guide to the amount consumed—is not adequate protection against overdosing except in the hands of those who have had more experience than the average veterinarian can ever hope to acquire, and even the most experienced will err in their judgment. On this account it is plain that we need a means of giving to a patient that exact amount it will require to bring about the desired state of unconsciousness and muscular relaxation and no more. The apparatus is designed to accomplish this feat.

In talking over the possibility of making an apparatus of this kind with Mr. Christianson, of Sharp and Smith, Chicago, our consultations culminated in the manufacture of a cheap and now

entirely workable instrument, and each successive experiment proves that we have actually invented something that is worth while. The apparatuses used by human anæsthetists we found were too complicated and therefore entirely too costly for general adoption by the veterinary profession. In scrutinizing these complicated affairs, we were unable to appropriate any part or principle and therefore we decided to adopt a new idea—the delivery of vapour by the use of heat

The apparatus as now manufactured consists of a container divided into two compartments, one for chloroform and one for a mixture of chloroform, ether and alcohol, each holding about 25 oz. This container is surrounded with a water jacket under which is an electric heater (an alcohol lamp will answer where there is no electric current). The top has two pressure gauges to announce the amount of pressure in each compartment. The outlets for each compartment converge into a single tube, and each outlet is equipped with a valve so that vapour from either compartment or both compartments at the same time may be given as one desires.

When the pressure in the compartments has reached about sixty pounds per square inch, indicated by the gauges, a rubber tube of smaller calibre is passed into the trachea through the uppermost nostril. The other end is attached to the outlet and the valve of the compartment containing pure chloroform is opened. Immediately the pressure sends volumes of vaporized chloroform right into the trachea. Both nostrils are left free to exhale and inhale without interruption, and as there is no sense of suffocation felt as when the nose is smothered up with a face mask, the patient passes through the stimulating stage of anæsthesia without much struggling. If there is a little delay in producing a narcosis the undermost nostril may be temporarily closed with the fingers, but this is seldom necessary. The patient usually passes quickly and safely into a satisfactory anæsthesia. As soon as there is the desired relaxation of the musculature (profound anæsthesia) the valve is closed. The anæsthesia is thereafter maintained by occasionally opening the valve to send in a gust of vapour as the patient seems to require. It is our practice now in order to assure still more safety to bring the patient into the desired state of relaxation with the vapour from the chloroform compartment, and then maintain the anæsthesia

during the operation from the compartment containing the mixture of alcohol, ether and chloroform. In this way animals are kept in a state of unconsciousness for indefinite periods without consuming a dangerous amount of drug. The method has shown us that it really requires but little chloroform or ether to anæsthetize an animal if the vapour is rapidly absorbed and appropriated by the organism.

When an animal is about to be subjected to a serious operation of considerable duration (like the ablation of a large scirrhous cord, for example), we first administer a preliminary anæsthetic of chloral per os. This is given in solution as a drench to assure a more rapid and a more concentrated action than if given in a bolus or capsule. About 40 grm. is the dose usually given. An hour later the patient is secured in the recumbent position, the tube passed into the trachea and the vapour turned on. As soon as the respiration has become soft and relaxation of the musculature is beginning the current is lessened by partly closing the valve. When the relaxation has reached the desired point the valve is closed. The operation now begins and continues until there is the first evidence of revival; then the assistant is simply directed to open the valve of the A. C. E. compartment for a mere moment. Almost instantly the patient relaxes again from the gust of the A. C. E. vapour that was sent into the trachea. This opening of the valve is continued as often as necessary to maintain with this terminal anæsthetic (the A. C E. mixture) the desired state of anæsthesia throughout the whole operation. There is little danger of overdosing, as the actual volume of drug consumed is smaller than with the face mask and sponge.

This apparatus has never been publicly demonstrated; the experiments thus far made have been before private audiences. It is, however, planned to give public demonstrations to the members of the profession whenever the opportunity permits.—*American Journal of Veterinary Medicine.*

Parliamentary.

SWINE FEVER.

Mr. Acland stated, on September 16, in replying to Sir John Spear and Sir Walter Essex, that the recommendations contained in the final report of the Departmental Committee on Swine Fever had in the main been adopted and brought into operation in respect to the revocation of certain restrictions on the movement locally of swine. The procedure to be adopted as to serum treatment in swine fever outbreaks would be published almost immediately, and would be operative from September 26. Any further action must be based upon experience acquired.

CARBOLIC ACID DISSOLVED IN PARAFFIN OIL AS A MEANS OF PREVENTING SEPSIS IN GUNSHOT WOUNDS.

By Lieutenant M. K. ACHESON.
Royal Army Medical Corps.

As the result of the publication of Sir W. Watson Cheyne's illuminating oration in the *Lancet* of February 27, on the treatment of wounds in war, some experiments were undertaken at No. 1 General Hospital, on similar lines to those described by him.

Owing to stress of ordinary routine laboratory work, the limits of time, and to active service conditions, the work had to be considerably curtailed.

After going over some of the ground already covered by Sir W. Watson Cheyne, ordinary crude paraffin oil was adopted as being a promising medium for bringing antiseptics in contact with pathogenic micro-organisms. Carbolic acid was dissolved in water-free paraffin in varying percentages. The solution was then tested in reference to its bactericidal effects, its diffusibility, its power of penetration through organic substances, its toxicity, its volatility and its action on the vitality of living tissues and its absorption by them.

Local Bactericidal Action.—This was found to be somewhat similar to that of corresponding strengths of carbolic lotion.

Diffusibility.—A number of similar agar slopes in test tubes of the same diameter were thoroughly inoculated with *Bacillus subtilis*. One cubic centimetre of different strengths of the carbolic and paraffin solution and of various other antiseptics were carefully deposited through fine pipettes at the bottom of the already inoculated agar tubes without touching the agar except at the bottom of the tube. The tubes were incubated in the upright position for twenty-four hours at 37° C. After incubation the distance between the lowest margin of the growth of the bacillus on the agar slopes and the mean level of the antiseptic fluid was measured in millimetres. The results on the average of a number of observations are shown in the table on p. 484.

B. subtilis was employed because of its sporing nature, its rapid growth, readily recognized appearance, and the difficulty generally found in arresting its advance.

Penetration through Organic Substances.—A number of round lids (ordinary tobacco tins, &c.) were obtained. In the centre of each lid a hole was punched about the size of a shilling, over which was placed a circular layer of meat. This meat was about a quarter of an inch thick, free from intermuscular septa, of homogeneous fibre and completely filling the lid. The upper surface of the meat was inoculated with an emulsion of *B. coli communis* and *B. pyocyaneus*. The lid containing inoculated meat was then placed in another lid in such a way that the floor of the upper lid did not come into contact with the floor of the lower lid. Into the lower lid was poured a few cubic centimetres of the solution to be tested. In order to bring the lower uninoculated surface of the meat in contact with the fluid of the lower tin, a pledget of cotton-wool was placed in the antiseptic

	Strength	Distance between growth and antiseptic
Hydrarg. perchlor.	1-2,000	No growth.
Tincture iodine	*B.P.*	,,
Hydrogen peroxide	20 vols.	30 mm.
Carbolic and paraffin ...	2½ per cent. ...	20·6 ,,
Cresol	5 ,, ...	19·6 ,,
Carbolic and paraffin ...	2 ,, ...	17 ,,
Carbolic lotion	5 ,, ...	16·3 ,,
Carbolic and paraffin ...	1 ,, ...	12 ,,
Cresol	2 ,, ...	12 ,,
Carbolic olive oil	2½ ,, ...	8·3 ,,
Carbolic lotion	2½ ,, ...	7·5 ,,
Boracic lotion saturated ...	— ,, ...	1 ,,
Paraffin oil	— ,, ...	Slight inhibition.

in a position corresponding to the hole of the upper lid. The two lids were then placed in a Petri dish and incubated for forty-eight hours at 37° C.

As this experiment is a very severe test, certain precautions are necessary. All the specimens of meat should be taken from the same animal and from the same part of the animal if possible. As the meat during inoculation will swell considerably, large Petri dishes should be used to prevent pressure of the glass on the meat surface. The layers of meat should not be more than a quarter of an inch thick.

Various antiseptics were tested and compared with different strengths of the paraffin carbolic solution. It was again found that paraffin itself had no inhibitory action, but that even so weak a solution as the 1 per cent. carbolic paraffin acted as a deodorant and prevented marked decomposition in the meat. It not only

penetrated the meat in the centre in the neighbourhood of the point of contact of the solution with the lower surface of the meat, but also crept up around the margins of the meat at the periphery. Broadly speaking, the longer the meat was incubated in the presence of the carbolic paraffin, the more marked was the antiseptic effect.

In the case of hydrarg. perchlor. 1 in 1,000, hydrogen peroxide, carbolic paste in lower strengths than 10 per cent. carbolic oil 2½ per cent., the meat invariably became so offensive that as far as these substances were concerned the experiment had to be abandoned after thirty-six hours.

As regards tincture of iodine the results were rather interesting. Provided 15 to 20 c.c. of the tincture were poured into the lower tray, no decomposition occurred in the meat. With lesser quantities the results were not so satisfactory.

Unfortunately it is inadvisable, from the point of view of toxicity, to inject sufficient quantities of iodine into a gunshot wound to prevent sepsis occurring. Iodine must therefore be regarded as a failure in reference to gunshot wounds, simply because it may not be used in sufficient quantities. There is, however, no reason to discard its use in aseptic surgery.

Carbolic lotion and cresol lotion beginning at strengths of 5 per cent. were also proved to be of value as penetrating antiseptics and deodorants, though the effects of the carbolic and paraffin were always found to be roughly at least two and a half times as great. That is the action of 5 per cent. solution of cresol or carbolic lotion was about equivalent to that of the 2 per cent. carbolic and paraffin. In the case of carbolic and paraffin solution, as long as the pledget of wool remained moist in the tray beneath the meat, practically no decomposition took place in thin sections of the meat, except when very weak solutions were used. The result of this experiment was striking as the inoculated meat reproduces pretty well the conditions found in a septic wound. Clots or dead tissue might be expected to be penetrated for a considerable distance by the carbolic and paraffin solution if kept continuously present in the wound by means of gauze packing and gauze wicks.

Toxicity.—One cubic centimetre of 2 per cent. carbolic and paraffin solution was injected subcutaneously into a guinea-pig (350 grm.) without ill-effect. No toxic effect was observed as a

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result of the use of the solution in a number of septic gunshot wounds.

Volatility.—Carbolic lotion incubated 37° C. was found to evaporate about four times as quickly as carbolic and paraffin solution of the same strength.

Injury to the Tissues.—No injury or corrosive effect was observed as a result of the presence of the paraffin solution on raw surfaces. The skin, however, was occasionally blistered.

Absorption by the Tissues.—The characteristic odour of the solution has been noticed emanating from wounds into which it had been injected twenty-four hours previously. Absorption is probably very slow.

Disadvantages.—The inflammable nature of the paraffin should not be dangerous with ordinary precautions. Blistering of the skin is due to the creeping nature of the paraffin, its lack of volatility and the intimate prolonged and continuous contact of the carbolic in the paraffin with the skin.

Conclusions.—The pure carbolic acid which has recently been recommended causes destruction of tissue at the seat of application, and the resulting slough may easily form a nidus for bacterial growth in a wound already devitalized and lacerated.

Carbolic paste in high strengths may prove toxic. It cannot be injected in any satisfactory fashion into a wound and has little or no superiority over much weaker strengths of the carbolic and paraffin solution.

The carbolic and paraffin solution is, roughly speaking, two and a half times as penetrating, twice as diffusible, equally bactericidal and equally non-toxic, as a corresponding aqueous solution of the drug. In addition it remains moist four times as long as an equal strength of carbolic lotion at blood heat.

It is suggested that all penetrating wounds should, as soon as possible, be injected by means of a glass syringe with a 2½ per cent. solution of the paraffin and carbolic, care being taken to protect the skin in the manner described below, and the wound should be then lightly packed with gauze. The plug may be moistened, if necessary, during the train or boat journey to the base hospital.

For prophylaxis the 2½ per cent. solution is recommended, for treatment 1 per cent.

Precautions.—The solutions should be made in bottles which

have been carefully dried and the paraffin should be filtered and water-free. A simple way of demonstrating the water impurity in paraffin is to add a crystal of methylene blue, when the water lying at the bottom of the vessel reveals its presence by the absorption of all the stain. It is necessary, however, to test for water before the carbolic is added, as carbolic paraffin is a solvent of methylene blue. This is important as a small quantity of water in the paraffin assimilates to itself the bulk of the carbolic, and thus a very small amount of water may constitute a very concentrated solution of carbolic acid sufficient to produce local necrosis, and at the same time nullify the essential penetrating effect of the paraffin.

In the experimental treatment of wounds in hospital with a 2 per cent. solution, it was found that blistering of that portion of the epidermis occurred where the superfluous oil overdrained, but it was discovered that if the superficial area exposed to the paraffin were painted with collodion, allowed to dry, and the injection then made, the ill-effects were avoided. The results of the treatment in wounds already septic were frequently gratifying.

Speaking from the point of view of a member of the staff of a base hospital, one is struck by the large percentage of wounded who on admission show comparatively little clinical evidence of being seriously ill, but who within the course of a few days develop the most profound degree of toxicity.

The problem arising in this campaign has been to find a suitable medium for introducing the antiseptic and retaining it in continuous contact with the tissues until such time as further surgical attention can be given to the wound.

As a result of bacteriological investigation and clinical experiment in the wards of this hospital, it would seem feasible that paraffin oil should be thus employed until a better medium is found.—*Journal of the R.A.M.C.*

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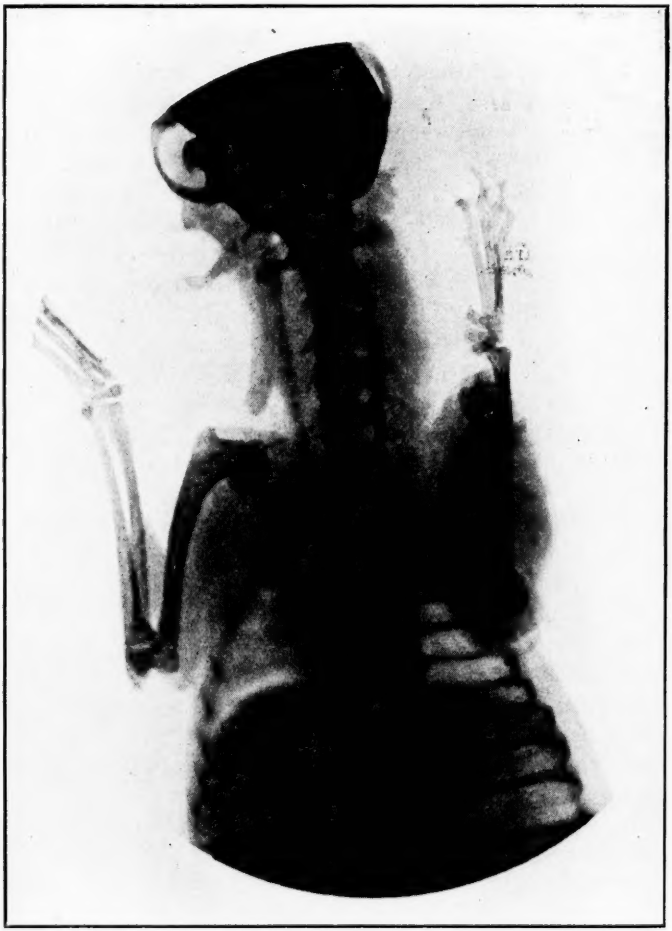

Radiograph of fracture of the atlas in a Toy Pom, by Guy Sutton.
See page 389, August issue.

Equine Clinicals.

TUBERCULOSIS COMPLICATED BY ECHINOCOCCUS CYSTS IN A HORSE.

By W. W. GOLDSMITH, M.R.C.V.S.

Hitchin.

On June 10 I was asked to see a lame colt. I found the subject to be a four-year-old Clydesdale gelding, a big, light-bodied, unfurnished colt. A slight swelling round the coronet was all that could be seen. A blister was applied and in about ten days he was sound. I remarked to the owner that he was not in such good condition as his other young horses and that a run at grass would probably do him good. The owner told me he had worked him very hard potato planting; that he was rather poor when he bought him; that he was a good worker. He would turn him to grass, with a feed of corn daily for a month or two.

On July 20 I was sent for to attend the horse immediately as he had caught a chill and was breathing badly. I found him thinner than when I last saw him. Hurried abdominal breathing, looking haggard and anxious, with a soft short cough. Grunted when turned round. Eating very little. Temperature 103° F. A little frothy discharge from nose, mucous membrane slightly injected and a dirty yellow.

On auscultating the chest, a general dulness over the whole of the lungs was found, with absence of sound over large areas. No pleuritic sounds. Heart weak. Pulse 75 to 80 and intermitting. I told the owner he had some grave lung trouble, and judging from his appearance I told him it might be tubercular.

The horse got the usual treatment. He rapidly got worse and died in a week. Not being satisfied as to what was the matter with him, I made a *post-mortem*. I found the lungs one mass of tubercle. There were no tubercle nodules on the pleura. The kidneys were studded outside with nodules. (I made a microscopic slide from a scraping of one of these nodules and they were teeming with tubercle bacilli.) On examining the liver, to my intense surprise I found a number of echinococcus cysts. There were also cysts on the mesentery. During the past twenty-five years I have only found echinococcus cysts in one horse in this district, that was a four-year-old colt. I asked the owner for the history of this horse. He bought him six months previously, in Scotland, from a dealer, and at my request found out that the dealer had him from a small farmer on the Isle of Islay, off the West Coast of Scotland, where he was bred. This combination of diseases is to me unique and I think must be rare.

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BOTS—PERFORATION OF DUODENUM—DEATH.

By A. A. LOCKHART, V.S., M.D.V.
Carnduff, Sask., Canada.

Grey mare about eight years old, weighing about 1,200 lb., took sick shortly after starting work in the morning. Had eaten usual morning feed.

When seen by writer about 4 p.m. mare was walking aimlessly about, head lowered and ingesta trickling from the nostrils. Breathing was accelerated and abdominal in character. Pulse small and rapid. No evidence of severe pain and no attempt to lie down.

Attempts at syphoning stomach proved abortive. Died at 11.30 p.m.

Post-mortem.—Almost entire contents of stomach in abdominal cavity and folds of omentum. An area of about 6 in. by 3 in. of the cuticular portion of the stomach was studded with bots as close together as they could get. On examining the first curve of the duodenum, the heads of two bots were noticed protruding through a perforation in the bowel wall, which looked just as if it had been cut out with a punch; and on making an incision through the bowel wall, the lumen was found filled with loose bots. A large teacup would have been required to hold them all.—*American Veterinary Review.*

Canine Clinicals.

INTESTINAL OBSTRUCTION IN DOG.

By CRITTENDEN ROSS, D.V.M.
New York, N. Y.

A Yorkshire terrier was presented at the office for treatment, with the history of not having eaten anything for several days. The client thought the dog's bowels were in good condition, but stated that he had vomited for the past two days. Upon examination it was found that the dog had no elevation of temperature, but the eyes looked dull, and the dog was drowsy.

Obstruction being suspected, a mild laxative and stimulating tonic was prescribed with good results. After the second day the patient was lively and began taking nourishment. This,

however, only lasted two days, when the little patient died. An autopsy revealed, just anterior to the cæcum, a small piece of roofing tar, the diameters of which were ¾ in. by ⅝ in. by ⅜ in., and the bowel wall for some distance anteriorly appeared markedly inflamed, and a portion even necrotic. From the above history and report, also the fact that the beginning of the duodenum was more inflamed than the rest of the organ, I assume that this object was lodged in the S-shaped curve, causing the first trouble; and that its passage onward to the above-mentioned point, accounts for the temporary favourable symptoms.—*American Veterinary Review.*

FÆCAL STASIS IN THE DOG.

By F. C. MAHON, M.R.C.V.S.
Southampton.

Subject.—A ten-year-old black Labrador retriever, the subject in a marked degree of the above-named condition.

History.—Briefly that for days prior to my attention being requisitioned he had passed no fæces and was perpetually straining. Further, that the dog had had a large bone to gnaw at, and it was presumed that such may be causing the general conditions of straining, capricious appetite, &c.

The owner, acting on advice given by a friend, had prescribed the usual panacea for so-called constipation, viz., castor oil, but the patient rejected the same very soon after its administration. My treatment was rectal examination, and I found the organ simply choked with sharp pieces of bone. Gave injections of extract belladonna, liquid petrolatum, and glycerine, which combination caused some liquid motion to pass. Manipulative treatment succeeded in removing several ounces in weight of pieces of bone, very well splintered. The dog evidently was relieved by this, and the owner told me afterwards "quite another animal." Prescribed brandy and liquid petrolatum in small repeated doses for a few days, but obtained no natural movement of the intestines. May add there was no flatus passed to any appreciable extent. My patient remained lively. Pulse strong, temperature but slightly elevated. Ordered beef-tea, bread and gravy, gentle exercise, and daily enemata of glycerine followed.

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On the ninth day I gave tinct. nux vomica 10 minims, with ½-oz. doses of liquid petrolatum. On the twelfth day the dog had a natural motion, and is now as well as ever. Now, in thirty years' experience of canine work, I have never known a dog go so long without some grave constitutional disturbance, following upon pronounced fæcal stasis, and in future will certainly persevere with the use of liquid petrolatum in kindred complaints, the advantages of its employment being that it is practically tasteless, inodorous, and mixes with the food, being taken easily by an animal; further, administered by such means it does away with the continual dosing of animals with noxious and other drugs, which unfortunately is very prevalent amongst so many, both in and out of the veterinary profession. So I may say I am, after years of experience, one of the school who learn to labour and to wait.

My antipathy to castor oil is very marked. I do not ever remember prescribing it for any patient, but have attributed loss, and if not death, aggravation of existing conditions, owing to its use. *Re* the human subject, I know many doctors use it still, but I venture to say that in dealing with an animal who cannot tell you what he has eaten or drunk is another matter. Some of my medical friends tell me they have discarded castor oil in these cases and use liquid petrolatum with marked success. In concluding my remarks, may I record that some years ago I had a case in a butcher's horse who passed no fæces for sixteen days and lived for years afterwards. This patient suffered paroxysms of pain to an alarming extent. I remember that no purgative was administered, and very little of enemas, and if so, belladonna was a sheet anchor; chlorodyne, to a very great extent, was used, and linseed tea given. Rectal injections of beef-tea, milk and eggs, as no food was partaken for nine days. This patient recovered as I say. Physostigmine, arecoline hydrobromide, and the other numerous purgatives were then unknown.

I think I will, *Deo volente*, stick to my old remedies, and occasionally try some new ones, for the rest of my sphere of utility in the profession I belong to, and not be one of the school who do fear to step in where angels fear to tread.

[Liquid paraffin has no irritant effect on the intestinal mucosa. It permeates the intestinal contents and makes them soft. It is especially indicated in cases of constipation and toxic and inflammatory conditions of the intestine.—Ed.].

Abstracts.

ON ROARING IN HORSES.

THERE has been so much written on this subject that it would seem as though no more could be said about it. And yet it is quite certain that the subject is not yet entirely exhausted, if we can judge by the publication recently made of the little book of Professor Doctor H. A. Vermeulen, of the Veterinary School of Utrecht.

In this little book of about 100 pages, with a number of illustrations made from microscopic preparations, the doctor presents a new theory of the pathogeny which has for its starting point the researches made by Walter, to demonstrate the influence of thyroidectomy upon peripheric nerves. Indeed, the theory is that the left laryngeal paralysis that follows that of the recurrent nerve is but a nervous affection, under the influence of troubles of the thyroid gland.

Important experiments have been made, the anatomical disposition has been minutiously observed and described by the author, and if one bears in mind the frequency of the streptococcic infection, which is sometimes so severe, for the thyroid apparatus, and which is so frequently followed by roaring—all those seem to justify the admission of the ideas advanced by Professor Vermeulen.

In his book the author has presented his subject well, he has recorded and given numerous experimental evidences and everything testifies of the great credit that is due to the author for the interesting conception he has presented in his new theory. A conception which in fact has seemed to be confirmed by the good results that have been obtained in few cases where at the onset of the disease, thyroidean opotherapy was resorted to. These good results were but few it is true, but it is nevertheless of great interest to veterinarians if after all the great application of Professor William's operation should find itself likely to make room for an opotherapeutic treatment as beneficial and which would be a grand progress for the therapeuty of roaring.—*American Veterinary Review.*

POULTRY FEEDING.

Mr. B. F. Kaupp, M.Sc., D.V.S., has been making experiments at the North Carolina Agricultural Experiment Station into the cotton-seed meal feeding of poultry, and the conclusions he comes to are:—

(1) Cotton-seed meal in dry mash constituting 10 per cent. of the mixture for laying and breeding stock for a space of ninety days in nineteen flocks of birds, has shown no noticeable physical effect. They apparently eat it with relish. This mash is given along with a morning and evening scratch feed and acts only as an adjunct.

(2) Cotton-seed meal constituting 20 per cent. of a fattening ration in seven tests proved unpalatable and the birds having a tendency to become sick of it, did not eat sufficient to make satisfactory gains and in some cases actually lost weight when kept on it for a period of eighteen days.

(3) In cram feeding of twelve birds, four, or 33⅓ per cent. were thrown completely off digestion, as evidenced by the food remaining in the crop. Three died and one later digested her food again.

(4) Twenty per cent. cotton-seed meal in one cram test did not produce satisfactory gains due to its ill-effect, in this quantity, upon digestion.

(5) In two tests upon three Leghorns, gossypol apparently produced the same results as were noted in the cram feeding and other lots.

(6) In the trough feeding which proved unsatisfactory gains, the maximum amount of cotton-seed meal consumed was slightly less than one ounce a day.

(7) In the cramming work the maximum amount of cotton-seed meal was slightly in excess of two ounces a day.

(8) It was noted that birds of weak constitution and delicate appetite are the first to become affected.

(9) All through this set of preliminary tests it was noted that as soon as the quantity of cotton-seed meal consumed reached about one ounce or more per day they may become sick.

(10) A bird sick of cotton-seed meal will usually eat grain such as corn, wheat, or oats, unless the effect be so aggravated that the food remains in the crop.

ON THE TREATMENT OF TORSIO UTERI.

By Veterinary-Surgeon U. JORDI.

Huttivill, Switzerland.

The publications on torsio uteri and its treatment are so numerous that it appears almost impossible to set forth anything new on the subject. Nevertheless, I consider it my duty to make some remarks on a variation in the treatment which to my knowledge has not hitherto been presented. It may happen that with an open os uteri manual retorsion or the remedying of the position by rolling over is beset with difficulties. This often happens in cases where lay helpers have overlooked the presence of a fourth or half-twist torsion, and have uselessly brought the feet and head into the vaginal passage. If I cannot make retorsion in these cases in the usual way I endeavour to remedy the defect as follows: The subject is raised as high as possible behind, the feet of the fœtus carefully pushed back into the uterus and a cord put over the nape of the neck. Then the nose of the fœtus is taken in the hand and with two helpers on the cord it is slowly drawn upwards. The head of the calf is then generally rather easily brought into the passage and at the same time retorsion is perfect. If in the pulling the pressure on the hand is too strong so that a rent of the orifice is risked, I stop the pulling, thrust the head back again, and keep on repeatedly pulling until the difficulty is overcome. As soon as the torsion is remedied the head is shoved back again, the feet brought up, the patient placed in the usual position, and delivery accomplished. I have succeeded thus in dozens of cases without ever injuring the uterus, and in this way remedied the torsion and accomplished the birth successfully. G. M.

REPORT ON THE WORKING OF THE VETERINARY DEPARTMENT OF THE RANGOON MUNICIPALITY FOR THE YEAR 1914-15.

Contagious Diseases (Animals).

Glanders.—The year has been marked by a still further reduction in the number of cases of this disease, and attention has again been directed more to the regular inspection and cleaning of stables than to wholesale inoculation—which has only been resorted to on the discovery of a clinical or suspicious case in a stable.

The police employed under this heading have been kept steadily on patrol work watching for stray ponies, of which 124 were arrested, against 190 and 457 in the two previous years.

I have maintained, and am still of opinion, that the more stringent measures we adopt against allowing animals to be turned loose on the road-sides the fewer cases of contagious disease of all kinds we shall have to contend with, as both pony and cattle owners are in the habit of turning an animal loose the moment it is sick. Of the 124 ponies found straying, eight were discovered to be clinically affected, and two reacted to the mallein test.

During the year 537 ponies and horses, which were suspected to have been exposed to infection, were examined, of which 480 were inoculated with mallein. Of these 430 gave a negative and twenty-three a positive reaction. This gives a percentage of 4·79, which is a slight increase on the previous year.

The number of clinical cases discovered during the year throughout Rangoon, including those of the stray animals, was 24, as compared with 39 and 61 in the two previous years.

The existing rules regarding the diagnosis of glanders by means of mallein, as laid down by the Local Government, provide only for subcutaneous inoculation. It has now been found that with a modified form of mallein the ophthalmic test is equally certain and very much more easily applied. In America, and most continental countries, it is now being adopted and the reactions it affords regarded as reliable and definite.

I consider the Local Government should be addressed with a view of altering the rules by allowing the ophthalmic as well as the subcutaneous test.

Epizootic Lymphangitis.—This disease simulates glanders very closely and it is difficult to make the gharry-wallahs appreciate the difference, especially in view of the fact that no compensation is payable on its account.

During the year seven cases have been discovered as compared with two last year, each being carefully proved by bacteriological tests.

All the cases occurred in old worn-out animals, so that the loss to the owners was inconsiderable.

Surra.—Two cases of this disease as against four in 1913-14 have been met with during the period under review—both being discovered *in extremis* so that the new method of treatment described in my last annual report was inapplicable.

Anthrax.—Ten cases of anthrax have been reported or discovered, of which two occurred amongst the municipal stud of bullocks and one in a sheep at the slaughter-house. So far as has been possible, anthrax carcases have always been destroyed by fire, but with the present incinerator this has been made a much easier and simpler affair, and the number of cases should show a tendency to diminish. Last year the number of cases was twenty-three. No case in the human subject has been reported to the Health Officer.

Cattle Plague.—From *post-mortem* at the knackery 106 deaths were ascribed to this cause, as against 60 in the previous year. Two deaths occurred amongst the municipal bullocks.

This disease is brought into the town mostly by the large number of cattle coming to the cattle market, and until some system of quarantine stations on the main roads (Prome and Kokine) leading into Rangoon is adopted, where all animals coming into the municipal area would be examined, very little can be done as a preventive measure.

Epizootic Aphtha (*Foot-and-mouth Disease*).—From the records obtained from the S.P.C.A. Hospital, this disease was less prevalent than in many previous years. It is spread by the virus from the vesicles occurring on the mouth or feet and is therefore essentially a disease which will increase or diminish according as we permit or disallow cattle to stray. It is not a fatal disease, but an epidemic causes considerable dislocation of cart traffic and consequently to the business of the town.

Rabies.—According to newspaper reports, a large number of

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people have been admitted to the General Hospital for treatment on account of having been bitten by dogs. So far as I am aware no death has occurred amongst these which has been attributed to rabies.

There have been ten cases, however, in which sufficient time for observation and diagnosis leave no doubt as to the existence of the disease.

Two poisoners have been employed throughout the year who have used over 6,000 baits. The actual number of dead dogs collected on which the poisoners received the bonus was 5,286, as compared with 3,906, the average of the two previous years.

The question of the propriety of poisoning by strychnine as opposed to the more humane method of the lethal chamber has been referred to the Committee by the Local Government.

No one desires to inflict unnecessary pain on these unfortunate creatures—and if it were possible to catch them no doubt a properly constructed and carefully managed lethal chamber would be the most humane method of destroying them. As a matter of practice, however, it has been found that many of the so-called lethal chambers are nothing more than suffocation chambers, only as the animal is out of sight the pain it suffers, which is quite equal to that of poisoning by strychnine, is not evident.

In some parts of India it may be, and apparently is, an easy matter to catch the dogs with nets or nooses, but the deeply rooted objection of the Burmans to the taking of animal life precludes the possibility of this in Rangoon, and so strongly do they resent the work of poisoning that they use every means to prevent it, even to violent assaults on the poisoners. To overcome this a special dog trap has been devised which so far seems to promise considerable success and which, if maintained, will undoubtedly make the provision of a lethal chamber a necessity.

Pigs.—The new slaughter-house at Kemmendine has been built and is undoubtedly quite up to date and the finest anywhere in the East. Owing to pressure of work the engineer has not been able to complete the water or steam supply nor the electric light, so that at present it is not possible to use the place. The following is a brief description:—

The building is 100 ft. by 57 ft. 6 in. internal dimensions, and

20 ft. high to the eaves, divided down the centre by a low partition wall 6 ft. 6 in. high. Half the building is the "killing room," and other half the cooling room. There are two large entrance doors to the killing room and three exit doors from the cooling room, the latter doors having steel-framed porticos 15 ft. by 11 ft. 3 in. as shelters during loading of carts.

Construction.—Foundations are of cement concrete and brickwork in cement. Walls are of brickwork painted outside and cement-plastered inside. Roof is of steel framing covered with Marseilles tiles on teak rafters. Internally the walls throughout have a glazed tile dado 6 ft. high of pleasing design. The floor is paved with grooved blue Staffordshire paving bricks on a concrete foundation, and laid to slope towards glazed earthenware side channels. The latter lead through glazed earthenware trapped gullies to drains. The building is well lighted, and ample ventilation is secured by openings at floor and eaves level, and venetians along the ridge of roof.

Fittings.—The working benches have polished marble tops and are faced with glazed tiles on all sides. The scalding tanks in killing room are specially made with rocking grids and steam heating. In the cooling room carcase rails are provided in the centre of the floor space, and offal rails on the wall side. The tanks, carcase and offal rails are made by Messrs. Lockerkie and Wilkinson, who supplied similar fittings to the Penang Municipality, the erection of the whole building being carried out by Messrs. Howarth, Erskine and Co.

The acquisition of the adjacent land for extension of styes, as decided on by the Committee, has not been completed owing to the exorbitant rate demanded by the Local Government.

The following table shows the number of pigs killed, the rents received from styes, and total receipts for the last three years:—

	1912-13	1913-14	1914-15
Number of pigs slaughtered ...	18,503 ..	13,993 ...	19,277
Sty rents	Rs. 4,562-8-0 ...	Rs. 4,545-4-0 ...	Rs. 4,098-4-0
Total revenue	,, 23,065-8-0 ...	,, 18,538-4-0 ...	,, 23,375-4-0

From this it will be noticed that there has been a considerable increase in the number of pigs slaughtered, viz., 5,234.

The price of live pigs still remains abnormally high and consignments continue to be brought in from India.

Attention was drawn to this in my last Annual Report, and

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I still think it a matter that might well receive consideration from the Agricultural Department.

Three gangs of coolies were employed for three months of the year to destroy crow eggs, of which 15,585 were actually brought in.

MISCELLANEOUS.

The horses of the fire brigade and the ponies belonging to the Plague Department have been attended as required.

The calves of the Vaccination Depôt have been examined prior to purchase and *post-mortem* examination made on each after being destroyed.

ESTABLISHMENT.

The working of the Department has been considerably handicapped by the non-arrival of the Assistant Veterinary Officer owing to the War, and considering the desperate dearth of officers for the Army Veterinary Corps it is quite problematical when one will arrive.

The general routine has also been considerably upset by men being taken for guard duty, but in every case those remaining have loyally done the extra work required of them.

Certain portions of the establishment were revised in February, the chief items being:—

Consolidation and regrading of office clerks with two additional peons.

Revision of salary of Superintendent, Pig Slaughter-house, and the appointment of a Superintendent at the new Bullock Depôt, Kemmendine.

Abolition of the temporary staff for glanders and farcy and the substitution of a regular permanent staff to deal with all contagious diseases in animals.

Mr. Penfold, Superintendent of Slaughter-house, East, and Mr. Sequeira, Day Conservancy Sub-Overseer, Dalla, who are both over age limit, have each been granted a second year's extension of service.

I am glad to report that the work of the staff generally has been satisfactory.

ARTHUR BLAKE, F.R.C.V.S., D.V.H.,
Veterinary Officer, Rangoon Municipality.

Rangoon,
July 5, 1915.

AMERICAN ACCOUNT OF THE WAR-HORSE BUSINESS.

THE war-horse business, which has grown to enormous proportions since Europe went crazy, is full of remarkable and shocking features, says the *Chicago Tribune*.

It costs, on the average, $300 to set an Iowa farm horse down back of the battle trenches in good condition. It takes from three to six months to find the horse, sell him a couple of times, until he reaches the agents of one of the European governments, ship him across country in an express train and across the ocean in a big steamer, train him to stand gunfire and to respond to bugle signals and make him ready to "sniff the battle afar off."

Once he gets within reaching distance of the firing-line the horse is killed—on the average—in seven days.

DEAD HORSES USED.

Three months and $300 gone in seven days! But not quite gone. Back of the fighting columns travel great butcher shops on wheels. As soon as the fighting has died down these big vehicles appear. Every wounded or recently killed horse is promptly picked up and turned into fresh meat for the soldiers. His hide is saved to be tanned into leather and make boots for the men in the trenches.

That is a new lesson in efficiency.

Out of almost every town in the middle west the scouts of the horse buyers are working. Sound mares or geldings that weigh upwards of 1,200 lb. are wanted. They may be any colour but white or grey, which colours are too easily visible to lookouts and aeroplanes.

The scout, arriving in a small town, hires an automobile and engages a local man who knows most of the farmers in the country. They start out early in the morning over the country roads, visit every likely farm, pay cash for all purchases and ask immediate delivery. In a week a good buyer may pick up from forty to fifty horses, which will fill two cars.

SENT TO BIG CENTRES.

The loaded cars are sent across country to the commission merchants at the stockyards in Chicago or to some larger centre.

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Here they are first offered to the men who have taken contracts to supply 10,000 or 20,000 horses to one of the foreign countries. Some horses in each shipment are likely to be rejected for military use. Such are then sold on the regular market.

Each horse which is bought by the Army contractor is branded with his mark, usually on the right hoof and the right hip, and turned into a corral with his other purchases. Then the whole herd passes under the eye of the inspector for the foreign government, usually a veterinary surgeon, detailed for the purpose. Such as he accepts are again branded, this time on the left hip, with the brand of the government which now owns the animal. The English brand is a broad arrow. Italy uses an inverted V inside a circle.

Must be kept Two Weeks.

What happens then depends on how soon the next horse steamers are sailing for Europe. At any rate, it is necessary to keep all the horses from two to three weeks somewhere near Chicago, where they can get acclimated and rested from the long ride in the freight cars and the excitement of the stockyards.

For feeding horses during this period of rest great central stations have been established outside the various cities which have large horse markets. That for Chicago is located at Calumet Park, south of the city, where there is shed room and feeding space for more than 10,000 horses.

From the feeding centre the horses are sent east to the seaboard in solid trains, which usually run on express time, often reaching Jersey City, for instance, in forty-eight hours after leaving Calumet Park. More than once the big railroad companies have sidetracked their fast passenger trains to give a train loaded with prospective war horses the right of way.

What becomes of Cripples?

Often one or more horses in a car will be crippled by accident during this fast run, and it is always necessary to give them a second inspection before they are put on board ship. Just what happens to horses hurt in transit, and how badly they must be hurt before being rejected, seems to be something of a mystery, possibly concealing vague opportunities for graft.

A horse ship is usually manned by a lot of young fellows who

feel the lure of adventure. Among them are likely to be some new graduates of veterinary colleges. So far as memory serves, steamers loaded with horses have not been attacked by submarines or sunk by mines during the present War. The only horse ship which has suffered disaster seems to have been an Italian vessel carrying 800 horses, which caught fire in some mysterious way and was burned at sea.

Several Training Camps.

Each of the warring powers has several training camps for war horses. On the voyage across the Atlantic a number of horses are almost certain to be crippled by accident or through disease. Those remaining sound are ridden or led to the camp, where their final training for military service begins.

Farm horses from a thousand farms in the middle west are tied in rows to long ropes, which are supported by stakes driven into the ground about twenty feet apart. Two such rows face each other and their hay and other provender is carried down the centre between them and eaten off the ground.

Here the farm horses are taught to respond to bugle calls and other signals and are gradually accustomed to the sound of firearms, small and large. Horses destined for the cavalry are, of course, given a different training. It takes usually a couple of months to train them sufficiently to be of any use in actual operation.

Then to France.

From England the prospective war horses are taken across the channel to France. Once in real war service they survive from four to ten days. Then it is a case of fresh meat and sausage.

So far, the official figures of the Government show that about $50,000,000 has been invested in American horses by the warring powers. At the fair average price of $200 that would represent 250,000 horses. Big as that figure is, the last census showed that there are something like 20,000,000 horses in the United States and anything like a horse famine is apparently far off.

Mules the men of war are not buying in large quantities. Only about 40,000 mules have so far gone out of the country. The reason is said to be that a mule will not face gunfire. When the guns begin to roar the mule wheels and runs.

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THE LATE CAPTAIN M. STEVENSON, M.R.C.V.S., A.V.C. (T.).

We very much regret to announce the death at the Hospital, Albassia, Egypt, as a result of wounds in the head, of Captain M. Stevenson, one of the best-known veterinary surgeons in North London. He was 49 years of age. He took his diploma in Glasgow in 1888.

We append the following notice, contributed by a correspondent, of a distinguished member of our profession, and a gallant officer who has died gloriously for the country:—

"Captain Stevenson, who served in the Boer War, offered his services at the outbreak of hostilities in August, 1914, and immediately went to France with the Army Veterinary Corps. He was home the following month, having been injured during a stampede of horses, and on his recovery he returned to the Front. He was not back in England again till March, and a fortnight after his return he was transferred to Egypt. He wrote home in the cheeriest strain from time to time, and he sent a number of portraits which indicated that not only horses but camels were under his care in that country. A fortnight ago his wife received a cable which stated that he was very bad and had been taken to the Anglo-American Hospital at Albassia. No further news was received until the intimation of his death. Captain Stevenson had practised as a veterinary surgeon in London for about a quarter of a century and his skill in the treatment of animals was appreciated among all classes of society. He was a familiar figure at the Highgate Police Court, as he was invariably called by the police authorities to give evidence in cruelty cases. In this connection many kindly acts stand to his credit. He would always forego his fee in cases where poor men had been victimized in purchasing animals, and on more than one occasion he was instrumetal in securing for them a better beast than the one which the magistrate had ordered to be destroyed, and he frequently gave a helping hand to boys who expressed a wish to learn farm work by offering them employment on his farm at East Finchley. Mr. Stevenson was the winner of the International Leaping Contest, which was held at Rouen in 1892, and thus earned the title of champion jumper of the world. Mounted on a horse called Tasmania he defeated twenty-five of the best-known English, French, Spanish, and American horses, and in addition to winning the title of champion he took a prize of £1,000. He was the veterinary surgeon, too, who ordered the destruction of Holocaust when it was injured in a race for the Derby with Tod Sloan up. Mr. Stevenson was an Irishman, having been born in Tipperary, and he had all the geniality and good humour which characterize that race."

ARMY VETERINARY SERVICE.

(Extract from "London Gazette.")

B. W. BLOMFIELD to be Lieutenant (September 9).

Major E. E. Martin to be temporary Lieutenant-Colonel, while holding appointment of Assistant Director of Veterinary Services (February 6); Lieutenant-Colonel H. W. Pitchford, Natal Permanent Staff Defence Force, to be temporary Lieutenant-Colonel (July 16).

To be temporary Majors: Veterinary-Captain B. B. C. Rees-Mogg, 1st Life Guards (August 7); Captain W. G. Barnes, T.F. (August 16).

To be temporary Lieutenants: F. J. Pringle (August 24); W. J. S. Foley (August 26).

Captain R. Finch, New Zealand Army, Veterinary Department, to be Captain (temporary) (September 10).

C. Budd to be temporary Quartermaster, with honorary rank of Lieutenant (September 10).

J. Nagle to be temporary Lieutenant (July 20); G. C. R. Thorp to be temporary Hon. Lieutenant (August 23).

To be temporary Lieutenants: J. F. Donelly (August 3); W. H. Tummonds (August 8).

Lieutenants (on probation) confirmed in rank: R. Moore, G. C. Lancaster, J. G. T. Edwards, F. C. Minett, R. Daubney, M. G. O'Connell, P. T. Saunders, D. Marshall, H. S. Cockburn, E. H. Wyly, L. A. Auchterlonie, C. J. C. Ryan, H. J. Lowe, R. Wooff, H. L. Torrance, J. Fox, S. C. Rowbotham, D. C. Greene, H. McC. Johnston, J. A. Ward, S. Hunter, J. J. Hegarty, J. J. Dunlop, W. McG. Mitchell, M. F. O'Sullivan, T. T. Taylor, D. Blythe, A. V. Nicholas, W. H. Wortley, G. A. Roberts, S. H. L. Woods, C. Tracy, W. E. Footner, R. J. Forrest, T. M. Mitchell, W. J. Bambridge, P. D. Huston, P. S. Sparling, B. J. W. Nicholas, T. W. W. Wright, J. O'Carroll, R. T. Smith, H. B. Williams.

Temporary Lieutenant F. B. Barling relinquishes his commission on termination of engagement (September 11); G. H. Broad to be temporary Lieutenant (September 1).

W. B. Cronyn to be temporary Lieutenant (September 1).

Temporary Lieutenant A. S. Leese to be temporary Captain (September 15); R. G. Gray to be temporary Lieutenant (August 17).

Lieutenant J. Bell to be temporary Captain (August 27).

J. Paul to be temporary Lieutenant (August 11).

Major W. G. Dixon resigns his commission on account of ill-health (August 26).

Lieutenant E. H. Fisher resigns his commission (August 24).

C. F. Shawcross to be Lieutenant (July 15).

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DISEASES OF ANIMALS ACTS, 1894 TO 1914.

NUMBER OF OUTBREAKS AND OF ANIMALS ATTACKED OR SLAUGHTERED.

Great Britain.

(*From the Returns of the Board of Agriculture and Fisheries.*)

DISEASE	AUGUST		EIGHT MONTHS ENDED AUGUST	
	1915	1914	1915	1914
Anthrax—				
Outbreaks	25	36	418	518
Animals attacked	27	42	478	564
Foot-and-Mouth Disease—				
Outbreaks	—	3	—	14
Animals attacked	—	17	—	91
Glanders (including Farcy)—				
Outbreaks	4	5	36	73
Animals attacked	6	7	65	219
Parasitic Mange—				
Outbreaks	45	18	*580	1,521
Animals attacked	89	20	*1,260	2,633
Sheep-Scab—				
Outbreaks	2	3	161	153
Swine Fever—				
Outbreaks	246	222	2,993	2,821
Swine slaughtered as diseased or exposed to infection	982	1,421	13,342	28,939

* Figures for five months only, the Parasitic Mange Order of 1911 having been suspended from August 6, 1914, to March 27, 1915, inclusive.

Ireland.

(*From the Returns of the Department of Agriculture and Technical Instruction for Ireland.*)

DISEASE	AUGUST		EIGHT MONTHS ENDED AUGUST	
	1915	1914	1915	1914
Anthrax—				
Outbreaks	—	—	1	1
Animals attacked	—	—	1	1
Foot-and-Mouth Disease—				
Outbreaks	—	—	—	76
Animals attacked	—	—	—	957
Glanders (including Farcy)—				
Outbreaks	—	—	1	—
Animals attacked	—	—	3	—
Parasitic Mange—				
Outbreaks	9	7	53	62
Sheep-Scab—				
Outbreaks	22	15	290	390
Swine Fever—				
Outbreaks	13	16	175	158
Swine slaughtered as diseased or exposed to infection	90	107	1,000	819

Review.

Special Cattle Therapy. By Mart R. Steffen, M.D.-C.V.S. Veterinary Medicine Series, No. 7. Edited by D. M. Campbell, D.V.S. Chicago: *American Journal of Veterinary Medicine*. 1915. Cloth bound, 158 pages. Price 1 dollar 50 cents.

This is the latest volume of the Veterinary Medicine series edited by D. M. Campbell, D.V.S. It is a valuable little book which, while not ranging over the whole field of cattle ailments, yet gives terse descriptions and reliable advice concerning bovine diseases which are occurring every day. The therapy advised is up to date and quite likely to be effective, and we are pleased to notice the writer's advocacy of such drugs as the triple sulphocarbolates and salol instead of the drastic, irritant and nauseous agents that are frequently given to cattle. We appreciate the lines—"bovine therapy is a speciality of veterinary medicine which offers a considerable field for the development of improved and enlightened methods of treatment." Would that all practitioners would look at it in this way. That the author has been an acute observer in the field about which he discourses is proved by the fact that he gives the first written description we have seen of "Thurow's disease" in cattle, and also notes a condition which he names "persistent anorexia," which most cattle practitioners have seen in their time but have not generally christened. We have encountered the condition known as Thurow's disease on two occasions during the last four years, and it has puzzled us. We have not noticed the tremendous enlargement inferred by the author when he states that "the animal bears but little resemblance to a cow," but we have seen a wind baggy condition of the patient at many places and easily detected air crepitations under the skin. The state might casually be mistaken for black-quarter, but careful examination and the fact that death from the disease is very rare will differentiate it. The author does not give any opinion as to its etiology or pathology, which is regrettable. Acute simple agalactia and its treatment will appeal to all veterinarians who have dairy practice. It is a condition that needs wise handling, and the practitioner dealing with it skilfully and successfully will gain much credit.

There are various tips in the book that the clinician can put to the test of experience in his diagnosis of disease. If all of them turn up trumps, then the recognition of ailments by their symptoms will be easier for some of us than it has been. In

this connection we notice the author's bovine sign of a dead fœtus in utero and that of impaction of the rumen, &c. Impaction of the omasum is ignored. Is it because it does not occur?

We heartily commend the little book to all cattle practitioners. It is handy, useful, interesting, and will widen the clinical and therapeutical horizon of most of us. The author has for some time edited the Therapeutic Digest Department of the *American Journal of Veterinary Medicine*, so that he is an experienced man in this branch of science. All his descriptions are given in typical breezy American style and are well worth reading, and all his treatments show evidence of thought and insight and a determination to advance in that branch of knowledge upon which he dilates. Cattle practice in future years should increase and this book, if intelligently read and interpreted, should help to extend the veterinarian's practice among cattle. G. M.

LITERARY NOTE.

Messrs. Hurst and Blackett will publish immediately a new edition (the eighth) of Captain M. Horace Hayes's standard work, "Veterinary Notes for Horse Owners," an illustrated manual of horse medicine and surgery, written in simple language. First published in 1877, this notable work has for thirty-seven years maintained its supremacy. The late Captain Hayes has been universally recognized as the most competent authority on matters relating to horses, but it is owing to the fact that his "Veterinary Notes" has from time to time been thoroughly revised and brought up to date, as edition has succeeded edition, that the work has never lost its position. Now that a new edition has been called for, every care has been taken not only that every statement shall be accurate and authoritative, but that all the latest knowledge shall be utilized, the whole work has therefore been entirely re-set.

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